

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027657**Date Inspected:** 24-May-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1600**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** jobsite**CWI Name:** Salvador Merino**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS project**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above.

This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Orthotropic Box Girder (OBG) East Drop In: This QA Inspector observed the following.

13E-PP120-Transverse Stiffener (TS) TS-1: This QA Inspector observed ABF welding personnel Khit Lounechaney (#4985) using the Shielded Metal Arc Welding (SMAW) process in the vertical (3G) position. This QA Inspector observed QC Inspector Salvador Merino was monitoring the work and was informed the parameters were; 129 amperes. This QA Inspector observed a 3.2 mm diameter E7018 electrode was being used. This QA Inspector also observed a run off tab was not being used at the top of the weld joint. This QA Inspector informed QC Inspector Salvador Merino of the run off tab observation. ABF welding foreman Eric Sparks overheard this conversation and implied the run off tab was not being used to help eliminate the amount of carbon arcing that needed to be done, because the only way to remove the run off tab at the top was by carbon arcing. This QA Inspector implied run off tabs were required to be used, but that a Request For Information (RFI) could be submitted regarding the issue. This QA Inspector was informed by ABF welding foreman Erick Sparks a run off tab would be added to the top of the weld joint. This QA Inspector observed run off tab was added to the weld joint. This QA Inspector asked QC Inspector Salvador Merino which Welding Procedure Specification (WPS) was being used and was informed that he was not sure because he was not sure if the base material was A709 grade 345 or 485. This QA Inspector informed Lead QC Inspector Bonifacio Daquinag Jr. of this conversation.

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Shortly after this conversation, Lead QC Inspector Bonifacio Daquinag Jr. informed this QA Inspector he had stopped the welding at this location until the base metal was identified. This QA Inspector observed welding from only one side had been performed and was approximately 25-30 percent complete. See photo below.

Later this shift at approximately, 1230 hours, Lead QC Inspector Bonifacio Daquinag Jr. informed this QA Inspector ABF Engineering had confirmed the base material was A709 grade 345 and ABF-WPS-D15-1030 Revision-1 was being used for the welding and that welding had resumed. This QA Inspector reviewed the WPS and observed the welding appeared to comply with the contract requirements.

13E/14E Longitudinal Stiffener (LS) LS-2: This QA Inspector randomly observed ABF welding personnel Eddie Brown (#9331) using the carbon arc process to back gouge the weld joint at this location. This QA Inspector observed after ABF welding personnel Eddie Brown (#9331) had performed grinding QC Inspector Salvador Merino preparing to perform Magnetic Particle Testing (MT) on the back gouged weld. This QA Inspector randomly observed as QC Inspector Salvador Merino performed the MT and performed a random visual verification of the back gouged weld joint. The MT inspection technique and the work appeared to comply with the contract requirements, but this QA Inspector observed the preheat temperature of the weld joint had not been maintained. The minimum preheat temperature of 200°F is to continuous during welding. This QA Inspector placed a bare hand over the weld joint and it appeared to be an ambient temperature. This QA Inspector notified QC Inspector Salvador Merino of the observation and was informed he had become aware of the issue while performing the MT inspection. QC Inspector Salvador Merino informed ABF welding personnel Eddie Brown (#9331) of the continuous preheat requirement for the A709 grade 485 material. ABF welding personnel Eddie Brown (#9331) implied he was not aware of the requirement and concurred the induction heating blankets were not in operation at this time, but would turn them back on and not weld until the minimum preheat temperature was obtained. QC Inspector Salvador Merino stated he would make a note of this issue in his daily report; this QA Inspector informed him an Incident Report would be submitted regarding the issue. Later in the shift this QA Inspector stopped by to monitor the progress of the preheat and was present when ABF welding personnel Eddie Brown (#9331) asked his apprentice helper for a welding electrode; ABF welding personnel Eddie Brown (#9331) told the helper the electrode did not appear to be hot enough and to put it back into the electric storage container adjacent to the work station. This QA Inspector asked ABF welding personnel Eddie Brown (#9331) why he was checking the temperature of the electrodes with a gloved hand and was informed the storage container had become unplugged and the electrodes were being re-heated. This QA Inspector informed ABF welding personnel Eddie Brown (#9331) there were specific temperature requirements for the storage of the E9018 electrodes and that QC Inspector Salvador Merino should be informed when there is a loss of power to the storage containers. This QA Inspector observed QC Inspector Salvador Merino was only a few yards away and informed him of the conversation noted above. This QA Inspector was present QC Inspector Salvador Merino confirmed with ABF welding personnel Eddie Brown (#9331) that none of the electrodes had been used, welding had not been performed, and that electrodes should not be used from the storage container, but that electrodes from a container known to be working were to be used. This QA Inspector observed heated electrodes from a different storage container appeared to have been obtained and observed QC Inspector Salvador Merino verify the following parameters; 128 amperes. This QA Inspector reviewed ABF-WPS-D15-1012-3 Rev-0, being used by QC and the welding appeared to comply with the contract requirements.

### Summary of Conversations:

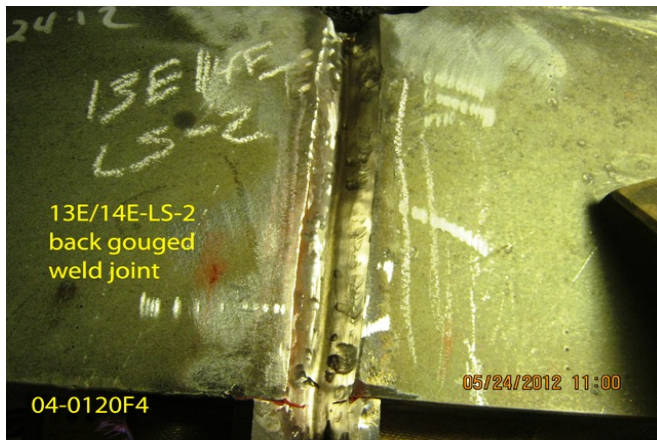
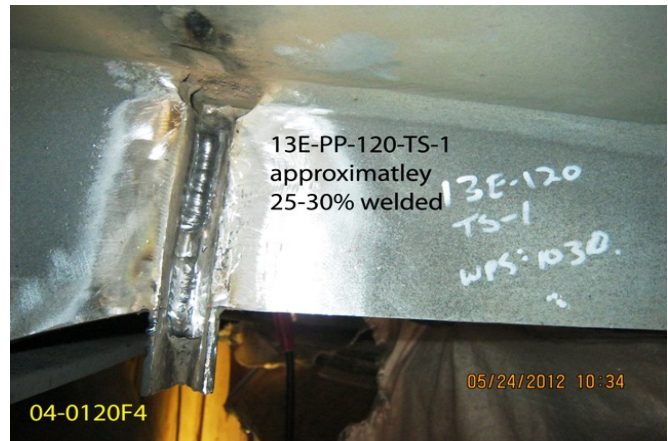
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This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above there were no notable conversations.



### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Hager, Craig

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer